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AUTHOR Prado-Olmos, Patricia; And Others
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ABSTRACT

A study investigated the effectiveness of a Cooperative Integrated Reading and Composition (CIRC) program in an elementary school bilingual classroom with exclusively Mexican-American students (n=35). Because cooperative learning strategies are based on peer interaction and participants contributing to the common goal, the videotaped interactions of four male students during the daily (four days a week) use of CIRC were analyzed to infer and identify teaching and learning strategies that might explain student skill acquisition during CIRC activities. The teaching strategies included were modeling, contingency management, providing feedback, instructing, questioning, and cognitive structuring. The interactions between the two high-reading ability students changed over time; interaction decreased in quantity, and the students stopped being actively engaged in answering questions and often worked on different questions. Interactions between the lower-reading-ability pair were much more frequent, involved much monitoring and active negotiation of answers, and were characterized by assistance-seeking from a teacher-aide. Both dyads used most of the strategies investigated. It is concluded that more than assisted performance theory is needed to guide analysis of student interactions, because the approach used here is too limited. A 15-item bibliography is included. (MSE)

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Cooperative Learning for Bilingual Students:

A Case Study of a CIRC Implementation

Patricia Prado-Olmos
Reyna G. García
Richard P. Durán

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Graduate School of Education
Educational Psychology
University of California, Santa Barbara
Santa Barbara, CA 93106

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INTRODUCTION AND OBJECTIVES

This morning I'm going to be presenting results and outcomes from a case study of a cooperative learning program entitled Cooperative Integrated Reading and Composition or CIRC (Stevens, Madden, Slavin, & Farnish, 1987) in an elementary bilingual classroom. The study is part of an on-going five year research program investigating how to make cooperative learning programs work for bilingual students. What I will discuss this morning occurred during the past year in a combined 3rd/4th grade bilingual classroom in Southern California. The case study approach to evaluate CIRC includes an in-depth description of the community, school and classroom, and observations and analyses of student interaction and student products.

Cooperative learning is widely regarded as an effective means for improving the learning achievement of all children regardless of their cultural and linguistic background. Such methods have been effective in increasing the achievement of students in many subjects and grade levels, in improving intergroup relations in desegregated classes, and in increasing student self-esteem and liking of school (Slavin, 1983, 1985).

At present there is little research on the effects of cooperative learning on language minority students (Calderón, 1989; Slavin, 1990). Kagan, et al, (1985), for example, studied the effectiveness of two cooperative learning strategies in schools serving Chicano and Anglo students. The Chicanos involved were highly assimilated and were not limited in English proficiency and hence of limited value to understanding how cooperative learning might operate in bilingual classrooms. Also, while CIRC has been successful in accelerating the reading comprehension, language skills, and writing performance of Anglo and African-American students, this particular cooperative learning curriculum has never been evaluated with language minority students. Clearly, there is a need for rigorous evaluations of cooperative

learning strategies such as CIRC as a means for discovering effective interventions increasing the achievement of language minority students.

Research that highlights the importance of understanding the social context of educational settings (Delgado-Gaitan, 1990; Trueba & Delgado-Gaitan, 1989; Spindler, 1987; Díaz et al 1986) is important to the present project. The research project makes use of qualitative methods and a case study approach to examine the implementation of CIRC in a 3rd/4th grade bilingual classroom. A pilot implementation of CIRC in English was conducted in the Spring of 1989. The pilot implementation allowed the teacher and researchers to become familiar with the CIRC procedure, as well as allowing the researchers to develop the best data collection procedures and to fine tune related research efforts. A year long implementation of CIRC in Spanish followed and began in the fall of 1989. Systematic observations and videotaping occurred throughout the school year. In addition, an ethnographic description of the community, the school, the classroom and the students was conducted to inform analyses of classroom behavior.

COMMUNITY RESEARCH SITE

CIRC became part of the bilingual reading program for a 3rd/4th grade classroom at a laboratory school-site in Southern California. Although our project has two research sites, I am focusing of the work in California.

Gaviota, this particular site, is a small residential community which lies on the California coast approximately 120 miles northwest of Los Angeles. It is surround by a beautiful natural landscape. The Santa Ynez Mountains on the north and the Pacific ocean on the south. It is an unincorporated area of the city of Santa Barbara, and has been struggling to establish cityhood for the past 20 years. Gaviota is both a semi-industrial and semi-agricultural area with a high proportion of its industry service oriented. The largest employer for the area is the University of California, Santa Barbara (UCSB).

Gaviota is for the most part an upper middle class community. This apparent by the real estate value of the area. The median price for single family home in 1990 was $320,000. The high cost of living in the area is compounded by the county's current drought situation. The high cost of living in the area make it virtually impossible for anyone who is from a working class background to own a residence in this area. So it is not surprising to find families living in overcrowded conditions.

Ethnically, Gaviota is still very "White" on the surface. A stable Anglo community who can afford to live there permanently predominates, and this can be observed in the faces of public official, professionals, and school personnel. Although small in numbers, there is a growing presence of a Mexicano and Latino community. Within the past 10 years, the Latino presence has become more noticeable, particularly in certain areas, though the Latinos tend to be a highly transient community. Latinos are scattered in the area's tenement section, usually two or three families to one apartment.

The school district which serves this community is relatively small, 38 hundred students total for the 1989-1990 academic year. The district has a total of 9 schools, all of them are elementary schools. Although there is a junior high and a high school within this district's boundaries, they are both part of the Santa Barbara School district and not the local school district. Consequently, all students who live in Gaviota eventually have to transfer to a new district in order to continue their middle school and secondary education.

The families of students attending schools in the Gaviota school district range from high socioeconomic to low socioeconomic status. Of the 3800 students in the district about 26% are Latinos. For the most part the Latino student population is concentrated at two schools which are "multifunded." This means they have every possible federal and state subsidy that they are eligible for. It is at these two sites that the district has bilingual programs, one of which is Feliz Elementary School.

The Feliz community, or F.C. as it is called by the locals, is unincorporated like Gaviota. It is home for many university students, low-income Latino families, and Indochinese refugees. F.C. is very expensive, with no rent restrictions or affordable housing for single families from middle class or low income backgrounds, although there is a section of expensively-priced single family homes on the far west end. Overall, because of the presence of the adjacent university and lack of sufficient on-campus housing, Gaviota is one of the most densely populated areas in the state of California.

F.C. sits on a mesa, which overlooks the ocean on the south, borders the university on the east, runs into university housing on the north, and borders a golf course and university faculty housing on the west. This geographical location physically separates F.C. from the rest of Gaviota. Buildings in the community consist of multiple apartment dwellings, restaurants, 2 grocery stores, a drugstore, and a few churches.

FELIZ ELEMENTARY SCHOOL

Feliz School sits on a 10 acre site that houses 18 classrooms. With a population of about 670 students, the school has had to move its Early Childhood Education Center to another site for kindergartners and preschoolers. In a report describing the diversity of the community, school officials stated last year that the student population at Feliz came from:

> "state supported welfare families, agricultural workers, middle and upper-middle class families, and student families, 80% of which live in rental housing. Approximately one-third of the families are single parent households. In addition, 50% of the children who attend Feliz School speak a language other than English. There are approximately 21 different languages spoken in the school."

An interview with Mr. Edwards, the principal of the school, revealed that the Feliz second language learner population is growing. According to the principal:

"The diversity of languages sometimes comes from the children of university students or professors." The largest language minority are the "Spanish-speakers", who are not all from one country. This "creates a diversity of country [origination], cultures, and approaches to education."

Mr. Edwards has tried to impart a holistic approach to schooling to the teachers. He explained that it is important "to acknowledge the child and not the curriculum." This has been put to the test with the demands on individualized instruction stemming from growing number of language minority children in classrooms, most of whom are Spanish-speakers from Mexico and Central America. The growth is an educational "challenge" for the staff at Feliz.

The population shifts in the last 10 years have seen an increase in migrant and low-income families. Resources for community and family self-improvement are virtually non-existent in the Latino community. The second language population, according to Mr. Edwards:

> [The Latino immigrant community is] "going through culture shock, through financial problems, and home situations that are not conducive, education is not a priority, survival is."

The Community Liaison staff person for Feliz Elementary School has been working for the school district for 10 years. She proved to be extremely valuable in describing the home situation of the students. She has developed strong personal ties with those families she has worked with. She describes the community as "mostly migrant", where both parents work. Children are left unattended in the mornings and evenings, and they receive very little help with their homework, since most parents do not speak English. She explained, "even if it [homework] were in Spanish, a very high percentage of parents are illiterate. So the children are really on their own." She clarified, however, that the parents "want their children to come to school, stay in school and do well! And yet they feel very frustrated because there is very little they can do themselves and for their children." She tells me that the Latino community is 80-85 percent of Mexicano origin.

Feliz School is a challenging setting for the implementation of CIRC. CIRC at Feliz closely adhered to the original model set forth by the developers at Johns Hopkins University. Some modification of the process had occurred in order to make the model applicable to the population in the classroom. All integral parts of CIRC were used with the Spanish speaking and English as a Second Language learners.

CIRC was used 4 days out of the week, Monday through Thursday, every morning from 8:30am to 10:00 am. The teacher had taught at Feliz for the past four years. Her classroom was composed of a total of 35 students for reading, despite the district policy goal of no more than 26 students per teacher. All of the students in the classroom were from a Mexicano background. These 35 students belonged to four different reading groups, but according to the teacher, they were "at multiple reading levels." Eighteen of the students, 50% of the class, were functioning at a first grade reading level at the beginning of the school year.

GOALS AND THEORY FOR STUDY OF CIRC INTERACTIONS

The general goal underlying analysis of students interactions during CIRC was to infer and identify teaching and learning strategies that might explain student skill acquisition during the CIRC activity. The theoretical perspective underlying this analysis of interactions drew on Tharp & Gallimore's (1988) "assisted performance" theory of teaching and learning. Based on interpretations of Vygotsky's original work, Tharp & Gallimore (1988) hypothesize that teaching and learning opportunities in the classroom arise through social interaction. "True teaching" can only occur when a teacher or more capable other assists the performance of a learner so that the learner can perform a task that could otherwise not be accomplished independently. In Vygotskian terms, the "zone of proximal development" represents the capacity of the learner to complete a task with assistance from a more capable other. According to Tharp and Gallimore, the goal of teaching is thus to assist a student in moving through

their zone of proximal development for a task, eventuating in ability to complete a task without assistance form a more capable other.

Tharp & Gallimore (1988) provide a taxonomy of teaching strategies in their theory of assisted performance that was useful to our analysis. These teaching strategies are ways in which teachers can help students advance through their zone of proximal development for a task. They include:

modeling: the process of offering behavior for imitation

contingency management: a framework of rewards and punishments arranged to follow on behavior, depending on whether or not the behavior is desired

feeding back: providing information on performance

instructing: calling for a specific action

questioning: calling for an active linguistic and cognitive response to a question directing thinking and problem solving activity

cognitive structuring: providing explanatory and belief structures that organize and justify.

Since cooperative learning strategies are based on peer interaction and participants contributing to a common goal, it would seem cooperative learning provides an ideal arena for effective teaching to occur. CIRC has never been analyzed according to assisted performance theory. This project made use of the theory in an attempt to answer the following specific question: What teaching strategies/components as defined by the assisted performance theory of teaching, are displayed in the interactions of two student dyads as they complete story comprehension questions in Spanish? Specifically, the interactions of 4 male students participating in a text question answering activity in Spanish within the CIRC curriculum were coded for the occurrence of the strategies listed above.

METHOD

Participants: The participants in this study were 4 male bilingual program elementary students who had not yet transitioned from Spanish to Spanish and English instruction. The students ages ranged between 9 and 10 years of age. The students had varied educational backgrounds. José arrived from Mexico in January 1989. He had attended school in Mexico and entered school in California immediately upon his arrival. His partner, Jonathan, had been in school in California for four years. Jonathan was retained in the first grade. José was in 4th grade and Jonathan in 3rd grade. The students were reading in Spanish at the 1st grade level at the time of the study.

Antonio was also a recent arrival from Mexico. The 1989-90 academic year was his first year at the school. His partner, Luís, was also in his first year at the school. Luís arrived from Mexico about the same time as Antonio. Antonio and Luís are 4th graders but read in Spanish at the 3rd grade level.

Observations: The students were observed as they worked in pairs to complete assignments related to a specific portion of the CIRC process. The students were observed as they read a story silently, aloud to each other, and as they worked together to complete a set of story related comprehension questions. The comprehension questions were structured around a story grammar analysis of the target stories: the who, what, when, where, and how of the story. The questions also activated higher order thinking skills such as summarizing, drawing conclusions, and making inferences from the target story.

The students were systematically observed throughout February, April & May. The observations alternated between each pair by story. For example, José and Jonathan were observed during one story cycle, and Antonio and Luís were observed during the next story cycle. In addition, the pairs were each videotaped twice. Observations lasted from half an hour to forty-five minutes.

RESULTS

Videotapes were transcribed and the transcriptions and observation notes were coded according to the 6 teaching strategies. The data were then examined for patterns of behavior and changes in patterns of behavior over time.

The interactions between Luís and Antonio, the highest reading ability students, changed over time. The students never interacted a great deal, but the amount of interaction between the two decreased over time. For example, an observation in February showed the students actively involved in completing their tasks and engaging in discourse as they negotiated a response to a question. They also monitored each other's written responses and examined each other's papers for errors in punctuation and grammar. A later observation in May revealed that the amount of interaction and the nature of the interactions had changed dramatically. The students were no longer actively engaged in answering questions; most of the time the students were on different questions as each student answered questions on his own.

Interactions between the lower reading ability pair of students, Jonathan and José, were dramatically different. They were characterized by a great deal of interaction between the two of them and the teacher-aide who was a participant-observer. Jonathan and José interacted continuously as they carried out CIRC activities. The students watched each other to make certain the other was doing things correctly and they were very quick to point out errors. They were also very conscientious about completing assignments and keeping each other on-task. Jonathan and José actively negotiated answers to questions. They were effective in appealing for help from a more capable other. Their discourse often involved the observer who sometimes served as an assistant to the negotiations or as simply a referee.

Both dyads evidenced use of strategies such as modeling, questioning, feeding back, instructing, and contingency management. As mentioned earlier, the amount of interaction between partners differed between the dyads. Jonathan and José engaged in more intra-dyadic communication than Luís and Antonio. Jonathan and José

displayed more strategies and solicited outside help more often than Luís and Antonio. Indeed, Luís and Antonio did not solicit help from each other or a teacher even when directly faced with a difficult question. Further, when help was solicited it was often indirectly related to the difficulty at hand. Luís and Antonio arrived at solutions independently and appeared to make use of metacognitive and modeling strategies such as referring back to the book for an answer. Interestingly, both dyads performed equally well and successfully on story comprehension questions involving relatively straight-forward derivation of information based on reading passages.

DISCUSSION

This study was an early attempt at examining student interactions within the CIRC framework. The study highlighted a number of important issues. First, it is clear that the application of the teaching strategies and ideas of assisted performance to interpret CIRC related student interactions is not a clear-cut endeavor. The analysis here suggests that Tharp and Gallimore's framework is helpful in describing the interactions from a teaching perspective. It was possible to find a number of clear-cut examples of students employing the teaching strategies identified by Tharp and Gallimore. Furthermore, assisted performance theory might be capable of interpreting the decrease in the amount of interactions between Luís and Antonio as possibly due to their movement through their zones of proximal development. Thus, assisted performance appears to be a useful and informative tool to code students' exchanges at a general and surface level of interaction.

Second, it is critical that we extend or go beyond assisted performance theory as first formulated by Tharp and Gallimore in guiding our analyses of student interactions. We know the amount of interaction between Luís and Antonio decreased over time. However, we do not really know why or what occurred in place of the interaction. It is possible that the reading comprehension strategies used by the students were sufficient to meet the demands of the academic task. If the task was

beyond the students' ability to complete individually, more interaction might have been stimulated. Why did we not see more evidence of the spontaneous occurrence of such interaction?

In advancing the research described, future work should focus on examining interactions from a sociolinguistic, constructivist perspective. These perspectives allow for examinations of the academic task, the participant structure, as well as the nature of the discourse. From this work we can learn how students structure and guide their own learning. We will learn what is actually being accomplished within the face-to-face interactions of students.

EDUCATIONAL IMPORTANCE

The bleak educational status of language minority students is well documented and is something we cannot ignore. Cooperative learning strategies hold one possible instructional solution to meeting the needs of language minority students. This project is examining one of the best established and validated cooperative learning methods designed for elementary reading instruction that has previously been found useful with monolingual students at-risk. CIRC has never been evaluated with language minority students and by engaging in this innovative work we hope to begin to devise solutions for improving the educational outcomes of linguistic minority students. The findings of research thus far indicate that students' ability to benefit from CIRC is only partially captured by reading test performance. Vygotskian and sociolinguistically based analyses of students' interaction provide a more informative account of how CIRC can benefit students. These analyses also are useful in diagnosing limitations in students' ability to benefit from CIRC. Altogether, such analyses provide concrete information which can help teachers and school-aides in exploring specific adjustments of learning activities which can help maximize students' learning.

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